

CLAIMS

1. A water-cooled engine, comprising:

a cylinder block having a cylinder bore and a water

5 jacket provided about the cylinder bore; and

a cylinder head assembled to the cylinder block, the  
water-cooled engine being **characterized in that:**

the cylinder block is divided at the water jacket into a  
cylinder liner portion and a cylinder outer wall portion,  
10 wherein the cylinder liner portion has a wall defining the  
cylinder bore, and wherein the cylinder outer wall portion  
surrounds the wall of the cylinder liner portion, thereby  
defining the water jacket between the cylinder outer wall  
portion and the wall of the cylinder liner portion, and

15 wherein the cylinder liner portion includes an upper deck  
portion integrally formed with the cylinder liner portion, the  
upper deck portion contacting the cylinder head assembled to  
the cylinder block, and wherein the cylinder outer wall  
portion has a top surface that functions as a receiving  
20 surface, the receiving surface contacting and supporting the  
upper deck portion.

2. The water-cooled engine according to claim 1,

**characterized in that** the cylinder outer wall portion includes  
25 a support portion integrally formed with the cylinder outer  
wall portion, the support portion supporting a lower portion  
of the cylinder liner portion.

3. The water-cooled engine according to claim 2,

30 **characterized in that** the support portion has a support  
surface that contacts and supports a lower end of the cylinder  
liner portion.

4. The water-cooled engine according to claim 2,

35 **characterized in that** the support portion has a support

surface that contacts and supports the wall of the cylinder liner portion.

5. The water-cooled engine according to any one of claims  
5 1 to 4, **characterized in that** the cylinder block includes a crankcase portion that is integrally formed with the cylinder outer wall portion.

10 6. The water-cooled engine according to any one of claims  
1 to 5, **characterized in that** the upper deck portion has a through hole that connects a fluid passage formed in the cylinder head with a fluid passage formed in the cylinder outer wall portion.

15 7. The water-cooled engine according to any one of claims  
1 to 6, **characterized in that**, in a state where the upper deck portion is held between a bottom surface of the cylinder head and the receiving surface, the cylinder head and the cylinder outer wall portion are fastened to each other such that the  
20 cylinder block is assembled to the cylinder head.

8. A cylinder block of a water-cooled engine, wherein the cylinder block has a cylinder bore and a water jacket provided about the cylinder bore, and is assembled to a cylinder head,  
25 the cylinder block being **characterized in that**:

the cylinder block is divided at the water jacket into a cylinder liner portion and a cylinder outer wall portion, wherein the cylinder liner portion has a wall defining the cylinder bore, and wherein the cylinder outer wall portion  
30 surrounds the wall of the cylinder liner portion, thereby defining the water jacket between the cylinder outer wall portion and the wall of the cylinder liner portion, and

35 wherein the cylinder liner portion includes a substantially planar upper deck portion integrally formed with the cylinder liner portion, the upper deck portion forming a

top surface of the cylinder block, and wherein the cylinder outer wall portion has a top surface that functions as a receiving surface, the receiving surface contacting and supporting the upper deck portion.

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9. The cylinder block according to claim 8, **characterized in that** the cylinder outer wall portion includes a support portion integrally formed with the cylinder outer wall portion, the support portion supporting a lower portion of the 10 cylinder liner portion.

10. The cylinder block according to claim 9, **characterized in that** the support portion has a support surface that contacts and supports a lower end of the cylinder 15 liner portion.

11. The cylinder block according to claim 9, **characterized in that** the support portion has a support surface that contacts and supports the wall of the cylinder 20 liner portion.

12. The cylinder block according to any one of claims 8 to 11, **characterized by** a crankcase portion that is integrally formed with the cylinder outer wall portion.

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13. The cylinder block according to any one of claims 8 to 12, **characterized in that** the upper deck portion has a through hole that communicates with a fluid passage formed in the cylinder outer wall portion.

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14. The cylinder block according to any one of claims 8 to 13, **characterized in that** the receiving surface of the cylinder outer wall portion has a bolt receiving hole to which a head bolt is threaded, and the upper deck portion has a bolt 35 through hole through which the head bolt is passed.